CLAIMS:

1. A method for processing packets of data comprising the steps of:

receiving a packet of data;

storing a payload of said packet of data in a buffer;

reading a header of said packet of data to extract a value;

indexing in a table storing a list of transport control blocks using said value;

performing a lock operation on a transport control block in an indexed entry in said table;

performing a read operation on said transport control block;

transmitting a notification to an application to read said payload, wherein said notification comprises an address of said transport control block; and

transmitting said payload of said received packet of data to said application whereby said application does not perform a lock, read, write or unlock operation on said transport control block.

2. The method as recited in claim 1 further comprising the step of:

receiving an invocation of a function call from said application upon said application receiving said notification to read said payload.

3. The method as recited in claim 1 further comprising the steps of:

performing a write operation on said transport control block;

performing an unlock operation on said transport control block; and

transmitting an acknowledgment to a transmitting network device.

4. The method as recited in claim 3 further comprising the step of:

transmitting an indication of a change in a size of said buffer to said transmitting network device.

5. The method as recited in claim 1 further comprising the step of:

transmitting said received payload to a processor to be processed.

6. A computer program product embodied in a machine readable medium for processing packets of data comprising the programming steps of:

receiving a packet of data;

storing a payload of said packet of data in a buffer;

reading a header of said packet of data to extract a value;

indexing in a table storing a list of transport control blocks using said value;

performing a lock operation on a transport control block in an indexed entry in said table;

performing a read operation on said transport control block;

transmitting a notification to an application to read said payload, wherein said notification comprises an address of said transport control block; and

transmitting said payload of said received packet of data to said application whereby said application does not perform a lock, read, write or unlock operation on said transport control block.

7. The computer program product as recited in claim 6 further comprising the programming step of:

receiving an invocation of a function call from said application upon said application receiving said notification to read said payload.

8. The computer program product as recited in claim 6 further comprising the programming steps of:

performing a write operation on said transport control block;

performing an unlock operation on said transport control block; and

transmitting an acknowledgment to a transmitting network device.

9. The computer program product as recited in claim 8 further comprising the programming step of:

transmitting an indication of a change in a size of said buffer to said transmitting network device.

10. The computer program product as recited in claim 6 further comprising the programming step of:

transmitting said received payload to a processor to be processed.

11. A system, comprising:

a communications adapter configured to communicate with an outside network, wherein said communications adapter receives a packet of data from said outside network;

a memory unit coupled to said communications adapter, wherein said memory unit stores a table listing a plurality of transport control blocks;

a TCP protocol stack running on said communications adapter;

a TCP application running on said communications adapter;

wherein said TCP protocol stack is configured to perform the following programming steps:

storing a payload of said packet of data in a buffer in said memory unit;

reading a header of said packet of data to extract a value;

indexing in said table using said value;

performing a lock operation on a transport control block in an indexed entry in said table;

performing a read operation on said transport control block;

transmitting a notification to said TCP application to read said payload, wherein said notification comprises an address of said transport control block; and

transmitting said payload of said received packet of data to said TCP application whereby said TCP application does not perform a lock, read, write or unlock operation on said transport control block.

12. The system as recited in claim 11, wherein said TCP protocol stack is further configured to perform the following programming step

receiving an invocation of a function call from said TCP application upon said TCP application receiving said notification to read said payload.

13. The system as recited in claim 11, wherein said TCP protocol stack is further configured to perform the following programming steps:

performing a write operation on said transport control block;

performing an unlock operation on said transport control block; and

transmitting an acknowledgment to a transmitting network device.

14. The system as recited in claim 13, wherein said TCP protocol stack is further configured to perform the following programming step:

transmitting an indication of a change in a size of said buffer to said transmitting network device.

15. The system as recited in claim 11 further comprising:

a processor coupled to communications adapter;

wherein said TCP application is configured to perform the following programming step:

transmitting said received payload to said processor to be processed.